

## **RESPONSE AND REQUEST FOR RECONSIDERATION**

### Support.

In new claims 10 and 11 the upper limit on the amount of component (b-1) is more precisely set at about 5 percent by weight. Support is found in the specification on page 8, line 3. The minimum amount of the total of dispersants in these claims is now also set at about 3 percent by weight. Support is found on page 9, line 21.

In new claims 10 and 11 the identity of the condensate of (b-1) is more precisely set forth as a condensation product of isostearic acid with a polyethylene polyamine or, more specifically, with tetraethylene pentamine. Support is found on page 6, line 14 and page 7 lines 7 and 8.

No other elements of the claims are changed.

### Response.

Applicants respectfully reserve the right to submit additional suitable data, arguments, or amendments during the term of suspension of prosecution if such become available.

In the outstanding office action, the Examiner raised three points. First, the amendment and arguments submitted on July 22, 2008 were sufficient to overcome the initial rejection. Second, a new obviousness rejection was entered based on a combination of Blythe (US 5,264,005) with Chamberlin (US 6,424,394). Third, the Examiner indicated that the data in the Declaration from Dr. Brent Dohner was not sufficiently commensurate with the scope of the claims to be convincing of unobviousness.

Dealing first with the question of breadth of the claims, new claims 10 and 11 are submitted which correspond more closely with the materials of the examples. In particular, the Examiner had noted that component (b-1) could be many different compounds, but only one was tested, namely, the condensate of isostearic acid + amine. (The specific amine which was used was a polyethylene polyamine, i.e., tetraethylene pentamine, the same as reported for Example 1 in the Specification.) Claim 10 now specifies that component (b-1) is the condensate of isostearic acid and a polyethylene polyamine, and claim 11 specifies that it is the condensate of isostearic acid and tetraethylene pentamine. These claims are quite clearly and specifically focused on the identity of the condensate of (b-1).

The new claims also more specifically identify the amount of component (b-1). Whereas initially the upper limit on this component was set at 8%, it is now reduced to

5%, which is very close to the 4.4% that was tested (i.e., 5% minus 12% oil). The new claims also more specifically identify the minimum total amount of dispersants to be present in the formulation as at least about 3%, rather than 1.5% originally. This is significantly closer to the actual amount of dispersants that was investigated.

Therefore, it is respectfully submitted that the newly submitted claims are commensurate in scope with the examples provided.

Even apart from the data and the discussion of the new claims, however, it is submitted that none of the present claims are made obvious by the combination of references cited by the Examiner.

The disclosure of Blythe, US 5,264,005, is considerably further removed from the present invention than the Examiner seems to appreciate. It is certainly correct that there is no indication in Blythe of the amount of antioxidant to be used, as the Examiner has recognized. However, several other features of the present invention are not found in Blythe. In particular, there is no disclosure of the use, together, of the mixture of dispersants meeting the requirements of the present invention. In Table 1 in column 30, for instance, there are no examples of the use of a Mannich dispersant (b-2) together with the reaction product of (b-1). Table 1 contains a matrix of certain materials quoted as being the product of Example 12 + Ex B2, Ex. 8 + Ex. B2, Ex. 2 + Ex. B3, or Ex. 6 + Ex. B3. None of these combinations are those of the present invention.

Within this matrix of Table 1, Example B-3 refers to the product of oleic acid + tetraethylene pentamine, which is included in present claim 1 but is not within the scope of component (b-1) of new claims 10 and 11. With regard to Example B-2, there are actually two examples in column 22 that are labeled B-2. One of them is the reaction product of isostearic acid + tetraethylenepentamine (which does correspond to present component (b-1)) and the other is the product of isostearic acid + diethylene triamine, which is not within the scope of component (b-1) of claim 11.

There are no examples in Blythe specifically designated as 12, 8, 2, or 6, as referenced in Table 1. One may speculate that what was intended was examples A-12, A-8, A-2, and A-6, respectively. None of these preparative examples designates a Mannich dispersant. Example A-2 explicitly provides an aminophenol product, as does A-6. Example A-12 is a succinimide product. Example A-8 begins with a polybutene-substituted phenol which is then reacted with paraformaldehyde and concentrated nitric acid, followed by polyethylene polyamine. This appears to provide some form of nitrogen-containing product, but not a Mannich dispersant, and, in any event, it is not a

reaction product with ethylenediamine or dimethylamine as specified in the present claims. And the amount of this A-8 material that is (presumably) used in Table 1 is 12% (in Example B), which is well above the claimed upper limit of 8%. The only preparative example in the "A" series that might reasonably be an appropriate Mannich product is A-14, which is the product of polypropyl-substituted phenol with dimethylamine and formaldehyde. However, the product of A-14 is not disclosed in combination with either the materials of B-2 or B-3.

Moreover, the Examiner referred to the nitrogen content of Example A-14 (apparently the only actual Mannich product) as 0.5%. It must be noted that this value is the nitrogen content of this particular component only, that is, the Mannich dispersant, and not of the final lubricant composition. The amount of nitrogen in an actual lubricant composition would depend on how much of this Mannich dispersant and the other dispersants are actually used, and that is something that we are not told. If about 8% of this Mannich dispersant were to be used, for example, it would contribute only 0.04% N, which is well below the amount specified in the present claims. (For the different formulations shown in Table 1 of Blythe, it appears that in some cases the total % N is within the presently claims limits and for at least one example it is outside.)

So in order to arrive at the present invention starting from Blythe, one would need to select a Mannich dispersant, select the correct amount of it to use, select the use in combination with an isostearic acid/ tetraethylene pentamine product (for claim 11), select a lubricant formulation in which the total nitrogen level from the dispersants is within the correct range, and then select the correct amount of an antioxidant. This five-fold selection is not obvious.

This deficiency is not remedied by the Chamberlin reference. It teaches a concentrate (Example K) which contains 0.5 parts by weight of a commercial mixture of p-nonylphenyl,phenylamine and di-p-nonylphenylamine. In other examples, the amount of the amine antioxidant is as low as 0.05 parts by weight (Ex. Z) or as high as 5 parts by weight (Ex. AA). A selection of the correct amount of antioxidant from Chamberlin would need to be combined with all the other selections required from Blythe in order to arrive at the present invention. It is submitted that the combination of all these selections is not obvious, irrespective of consideration of the data that has been presented.

#### Conclusion.

For the foregoing reasons it is submitted that all of the present claims are unobvious and in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and

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favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

The total number of claims after amendment is 11 and the number of independent claims is 3. Accordingly, it is believed that no additional claim fees are due. However, any required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,

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